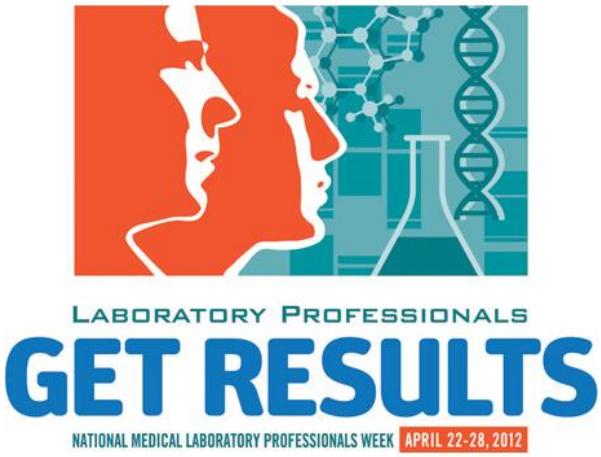

Celebrating National Medical Laboratory Professionals Week

April 22–28, 2012 is National Medical Laboratory Professionals Week. The week is dedicated to celebrate the life-saving contributions of more than 300,000 medical laboratory professionals. They care for patients every day by performing and interpreting tests that save lives and keep people healthy.

Medical laboratory teams are the cornerstone of accurate diagnoses for patients and often work in the background of every healthcare team. They are an integral part of the system that guides and assesses a patient's ongoing treatment and care. They consist of phlebotomists, medical laboratory technicians, medical laboratory scientists, histologists, cytologists, and pathologists.

Using state-of-the-art technology and instrumentation, laboratory professionals perform and supervise tests that lead to the detection of potential health problems; the sooner a disease is caught, the better the outcome. Laboratory test results drive a significant portion of clinical decisions, from diagnosis to therapy, with the ultimate goal of providing excellent patient care. In fact, test results comprise approximately 70 percent of a patient's medical record today. Whether it's a routine health screen, cancer diagnosis, or blood donation—medical laboratory professionals care for patients across the nation.

VAPAHCS Pathology & Laboratory Medicine

VAPAHCS Pathology & Laboratory Medicine is composed of approximately 95 laboratory professionals spread across the entire Health Care System. The industry is virtually unknown to most lay people and laboratories across the nation are suffering shortages. According to the U.S. Bureau of Labor Statistics, there will be a need for 81,000 new technologists and technicians to replace retirees and 69,000 to fill new positions to accommodate demand in the next few years. The average age of a medical laboratory professional is 55 years or older.

Preanalytics

The most visible of the laboratory staff are the phlebotomists who do blood draw rounds on inpatients, and receive patients in the blood draw stations & specimen drop-off stations in each CBOC (except Capitola). The PAD Blood Draw Station alone checks-in an average of 300 veterans a day for testing. These specimens are quickly submitted to undergo different stages of processing for preparation and routed to appropriate sections for testing. In 2011, VAPAHCS processed, routed, and resulted up to 2.9 million tests!

Point-of-Care

Point-of-Care Testing is any testing done at the patient's bedside. The most common of these tests is the finger stick glucose test to check blood sugar levels in a rapid manner. There are over 245,000 finger stick glucose tests done annually in VAPAHCS acute care. These tests are developed to be fail-safe in non-laboratory settings and are simple enough to be performed at home!

Clinical Chemistry

Clinical Chemistry is the study of most body fluids, measuring enzyme activities, mineral levels, and hormone levels that may indicate disease or other body dysfunctions. The VAPAHCS Chemistry Lab performs the most number of tests of all the lab sections, accounting for more than half of the testing volume. In 2011, up to 1.9 million chemistry tests were performed. Their extensive menu includes: basic chemistry panels, lipid panels, pregnancy tests, drug screens, protein electrophoresis, and urinalysis.

Hematology & Coagulation

Hematology is the study of whole blood and all of its components. Each cell type is counted, differentiated, and studied for any abnormal shapes or traits which may indicate a blood disorder. The work of the VAPAHCS Hematology & Coagulation Lab assists in the diagnosis and treatment of bleeding disorders and malignancies like leukemia and lymphoma.

They are also responsible in the study of the blood component Hemoglobin A_{1C} (or HbA_{1C}), an indicator of average blood sugar levels, used in the management of diabetes. In 2011, there were 47,131 HbA_{1C} tests performed.

Transfusion Services

Transfusion Services (traditionally called the Blood Bank) is the testing, preparation, and process of infusing or removing blood or blood components for therapeutic purposes. 1 in 7 people entering a hospital need blood. Blood donation drives note that someone needs blood every two seconds.

One unit of blood donated can be separated into several components: *red blood cells* – to carry oxygen to the body's organs and tissues; *plasma* – the liquid part of blood containing water, proteins, and salts; *platelets* – to promote blood clotting and give cancer and leukemia patients a chance to survive; *cryoprecipitate* – the component that contains important proteins for blood clotting.

In 2011, the VAPAHCS Transfusion Services Lab issued 2,720 units of red blood cells, 625 units of fresh frozen plasma, 1278 units of platelets, and 280 units of cryoprecipitate.

Clinical Microbiology

Clinical Microbiology is the study of living things not visible to the naked eye like bacteria, viruses, fungi, and parasites which are of medical importance and may cause diseases to human beings. It also includes the study of antimicrobials (the drugs that work against them), infection control, and epidemiology of communicable diseases (the distribution and pattern of illnesses in a given population).

In 2011, the VAPAHCS Microbiology Department handled 30,000 cultures in-house and worked closely with Infection Control and Public Health for outbreaks and disease monitoring.

Immunology & Serology

Immunology is the study of the body's immune system and its functions and disorders. Serology is the study of blood serum (the clear fluid that separates when blood clots) that contains antibodies – proteins produced by the body to identify and neutralize foreign objects that may have invaded the body.

The VAPAHCS Immunology & Serology Laboratory is the first VA lab in the country to adopt and perform an automated method for early detection of tuberculosis (IGRA: interferon-gamma release

assay). Recently, they were also instrumental in the investigation of product degradation of the blood tubes for this test that resulted to the manufacturer changing their shipping practices. They were able to present their findings to the Infectious Disease Society of America in Boston on October 2011, and again at the Global IGRA Conference in Hawaii on January 2012.

Molecular Pathology

Molecular Pathology is an emerging discipline focused in the study and diagnosis of disease through the examination of molecules (such as DNA) within organs, tissues or bodily fluids. The VAPAHCS Molecular Pathology specializes in the detection of HIV (Human Immunodeficiency Virus - the virus causing AIDS) genomic mutations that make current antiretroviral drugs ineffective against HIV, enabling the healthcare team to make better treatment decisions. They also perform HIV and Hepatitis C Viral Load testing to monitor patients' response to treatment. Due to these specialized testing capabilities, VAPAHCS Molecular Pathology serves most of VISN 21 and many other VA hospitals as far as Durham, NC.

Cytology

Cytology is the study of individual cells and is widely used to screen for cancers. Cells from the body are obtained by brushings or fine needle aspiration and are stained for examination of any abnormality. The most common cytology test known is the Pap smear (named after Dr. George Papanicolaou, who pioneered its use). Diagnosis by these methods helps avoid invasive surgery or direct appropriate surgical techniques. VAPAHCS performs approximately 3,000 cytology cases a year.

Histology

Histology is the processing, staining, and study of tissue. Tissues obtained from surgeries or biopsies are preserved immediately to capture its state, processed, and stained to study their chemical and physical properties under the microscope. VAPAHCS processes about 10,000 histology cases a year.

Anatomic Pathology

Anatomic Pathology is a medical specialty that is concerned with the diagnosis of disease based on the gross, microscopic, chemical, immunologic and molecular examination of organs, tissues, and whole bodies (autopsies). Board-certified Anatomic Pathologists and Pathology Residents from Stanford review hundreds of slides every day. While biopsies from every organ system are accepted, the most common cases at VAPAHCS are biopsies from the skin, gastrointestinal tract, bladder, and prostate. VAPAHCS also performs about 100 autopsies a year, offering conferences for families to discuss findings in the following weeks. VAPAHCS often hears from families how much they appreciate this service offered to them.

Whatever the setting - behind the scenes or out in your community - laboratory professionals are by your side, working as key members of your healthcare team. Please join these professionals in celebrating National Medical Laboratory Professionals Week and their vital role in promoting and protecting your health.